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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,501	08/29/2001	Katsuya Nonin	213434US2S	5245

22850 7590 07/30/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LAMARRE, GUY J

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 07/30/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

58

Office Action Summary

Application No.

09/940,501

Applicant(s)

NONIN, KATSUYA

Examiner

Guy J. Lamarre, P.E.

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2133

DETAILED ACTION

1. Applicants' IDS/priority paper/change of address of resp. 07/09/2003, 10/25/2001, 4/02/20003 have been entered. The Examiner has considered the IDS.

1.1 Pursuant to 35 USC 131, **Claims 1-4** are presented for examination.

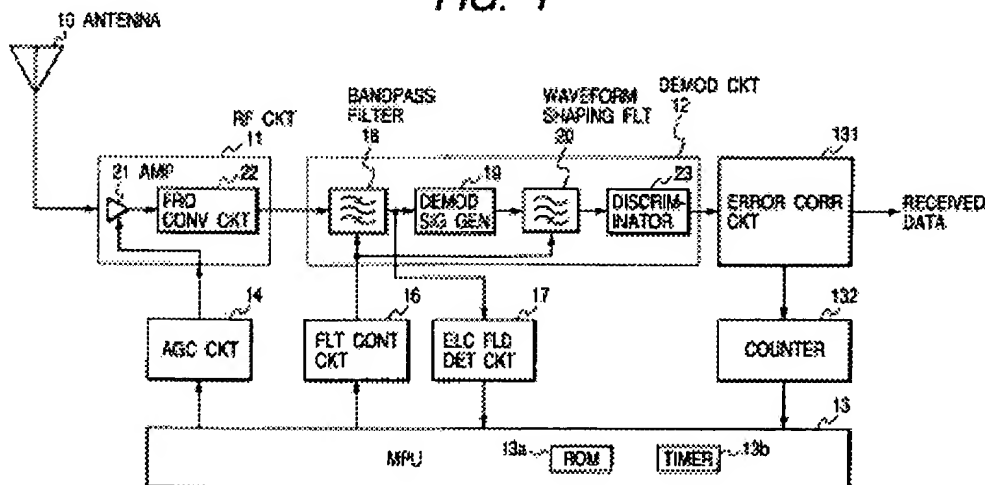
Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.1 **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al.** (US Patent No. 6,070,062-IDS) and **Summers et al.** '*SNR mismatch and online estimation in Turbo decoding*,' IEEE, 1998-IDS.

As per **Claim 1**, **Yoshida et al.** substantially all the limitations of the claimed error correction apparatus in Fig. 1 comprising: a receiving section configured to receive a signal; an amplifier section configured to amplify the received signal received

FIG. 1

by the receiving section; an automatic gain control section configured to generate a control signal and to control a gain of the amplifier section based on the generated control signal,

so as to maintain the amplified received signal at a predetermined level; and a turbo decoder configured to execute an error correction process on the received signal to thereby output a decoding result of the executed received signal based on the generated control signal.

Not specifically described in detail in **Yoshida et al.** is the ECC being effected via Turbo coding means. **However Yoshida's block 131 performs ECC. Accordingly, Summers et al.** discloses '*SNR mismatch and online estimation in Turbo decoding*,' in an analogous art, wherein such techniques are described. {See **Summers et al.**, Id., Abstract.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **Yoshida** by including therein *Turbo* coder means as taught by **Summers et al.**, because such modification would provide the procedure disclosed in **Yoshida** with a technique whereby "*performance near Shannon capacity limit is attainable with moderate decoding complexity*." {See **Summers et al.**, Introduction.}

As per Claim 2, Yoshida/Summers et al. teaches equivalent means to effect signal processing or the claimed error correction apparatus according to claim 1, the turbo decoder including a decoding section and a multiplication section coupled to the decoding section, configured to multiply the received signal by the generated control signal, so that the received signal has a reverse property of the generated control signal before the received signal is supplied to the decoding section of the turbo decoder. {See **Summers et al.**, Introduction.}

As per Claim 3, Summers teaches the claimed error correction apparatus according to claim 1, wherein the turbo decoder including a calculating section configured to calculate a path metric of the received signal, and an outputting section configured to output a decoding result of the received signal based on the calculated path metric, and a plurality of lookup tables related to a weighting process executed when calculating the path metric, the lookup tables being switched

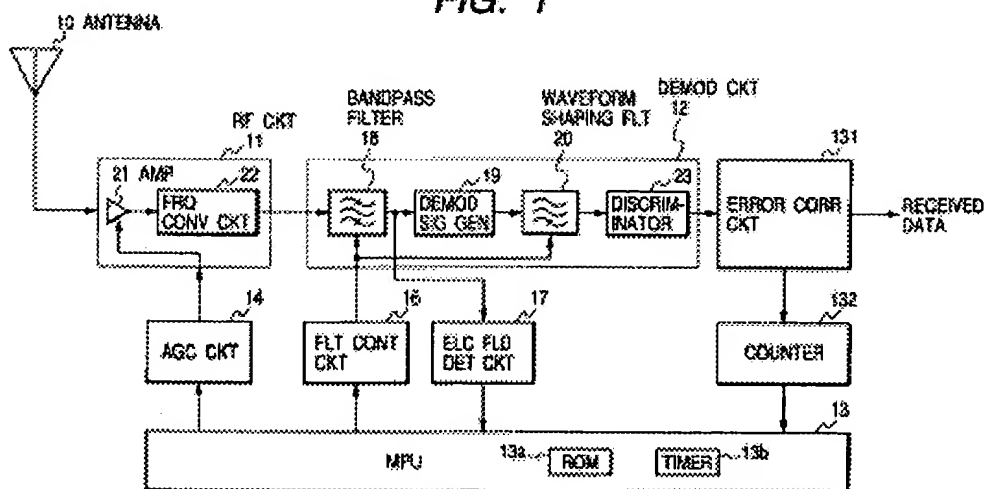
Art Unit: 2133

in accordance with the generated control signal to thereby change a weight used to calculate the path metric. {See **Summers et al.**, page 421 col. 2 end of para. 2.}

As per Claim 4, **Summers et al.** teaches equivalent Turbo decoding means and **Yoshida** discloses in Fig. 1 the claimed error correction apparatus according to claim 1, further comprising a reception power calculating section configured to calculate a reception power of the received signal, and an SIR estimating section configured to estimate a signal-to-interference ratio (SIR) of the received signal on the basis of the calculated reception power and by the generated control signal, the turbo decoder outputting a decoding result of the received signal, on the basis of the estimated SIR.

2.2 Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida et al.** (US Patent No. 6,070,062-IDS), and **Kumar** (US Patent No. 5,949,796'; Sep. 7, 1999).

As per Claims 1-4, **Yoshida et al.** substantially all the limitations of the claimed error correction apparatus in Fig. 1 comprising: a receiving section configured to receive a signal; an amplifier section configured to amplify the received signal received

FIG. 1

by the receiving section; an automatic gain control section configured to generate a control signal and to control a gain of the amplifier section based on the generated control signal,

Art Unit: 2133

so as to maintain the amplified received signal at a predetermined level; and a turbo decoder configured to execute an error correction process on the received signal to thereby output a decoding result of the executed received signal based on the generated control signal.

Not specifically described in detail in **Yoshida et al.** is the ECC being effected via Turbo coding means. **However Yoshida's block 131 performs ECC. Accordingly, Kumar** discloses '*In-band on-channel digital broadcasting method and system,*' in an analogous art, wherein such techniques are described. {See **Kumar, Id.**, Fig. 4: block 41 for concatenated coding, and "turbo" coding means; data storage means via look-up tables.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **Yoshida** by including therein *Turbo* coder means as taught by **Kumar**, because such modification would provide the procedure disclosed in **Yoshida** with a technique whereby "Convolutional and/or block ECC coding, including combinations thereof (e.g. concatenated coding, and "turbo" coding) may be implemented." {See **Kumar**, e.g. Fig. 4: block 41.}

Conclusion

3. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Fourth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

Art Unit: 2133

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached at (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Guy J. Lamarre, P.E
Primary Examiner
7/23/04
